REMARKS

Claims 1-6, 8-16, and 18-34 are pending in the application. Claims 7 and 17 are cancelled. Claims 28-34 are newly presented. Favorable reconsideration is respectfully requested in light of the following Remarks.

Claim Rejections - 35 U.S.C. § 101:

Claims 12-21 were rejected under 35 U.S.C. § 101 for being directed to non-statutory subject matter. In response, those claims have been amended as suggested in the Office Action to be directed to a computer-readable media encoded with a computer program. Accordingly, withdrawal of the rejection is respectfully requested.

Claim Rejections - 35 U.S.C. § 102:

Claims 1, 3-12, and 14-27 are rejected under 35 U.S.C. § 102(b) as being anticipated by Evans. This rejection is respectfully traversed.

Claims 9 and 19 have not been amended, but have been rewritten into independent form. Each of claims 9 and 19 recite that "accurate engine data is provided to the pilot in combination with the fictional condition data." The Office Action asserts that this limitation is disclosed by Evans at column 3, line 62 when it states "realistically simulate...provide display indications...reduced power outputs that are less." However, a full reading of the section states that Evans:

> [P]rovides display indications for selected engine operating parameters during OEI flight procedures training that correspond to the actual display indications perceived during OEI flight operations under actual 30-second, 2-minute, and maximum continuous OEI power ratings, ***even though the dual-engine helicopter is conducting OEI flight procedures training under reduced power outputs that are less than the actual*** 30-second, 2-minute, and maximum continuous OEI power ratings, respectively.

Evans at Col. 4, lines 1-9 (emphasis added).

Please note that the use of the word "actual" in the above section of Evans does not relate to that which the helicopter is actually experiencing and is not accurate data. Instead, the display indications show data for that which the helicopter would experience in an "actual" OEI situation. Thus, the display of Evans shows what the helicopter is not experiencing. Thus, the display of Evans does not show accurate engine condition data. Accordingly, withdrawal of the rejection is respectfully requested.

Independent claims 1, 12 and 22 have been amended to include "displaying fictional engine condition data simultaneously with accurate engine condition data." This too is not disclosed or suggested in the prior art of record, including Evans.

Accordingly, since the remaining rejecting claims depend from on of claims 1, 9, 12, 19 and 22, withdrawal of the rejection to claims 1-6, 8-12, 14-16, and 18-27 is respectfully requested in light of the above remarks.

Claim Rejections - 35 U.S.C. § 103:

Claims 2 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Evans in view of In re Harza. This rejection is respectfully traversed.

Since claims 2 and 13 depend from claims 1 and 12, respectfully, and since In re Harza is presented only for the issue of duplication of parts and fails to provide for all of the deficiencies of Evans as set forth above, withdrawal of the rejection is respectfully requested in view of the comments set forth above with respect to claims 1 and 12.

New Claims

New claims 28-34 all depend from allowable independent claims and present additional features of the disclosed embodiments making them further allowable over the prior art of record.

Information Disclosure Statement

An Information Disclosure Statement is being submitted herewith as a resubmission, in response to the Examiner's indication in the Office Action that the Sikorsky reference (filed with a August 3, 2001 Information Disclosure Statement) was not considered because it was "not present in file." Also enclosed is a filing receipt received from the Patent Office evidencing that a copy of the Sikorski reference was received by the Patent Office on August 8, 2001. Thus, consideration of the Sikorski reference is requested without fee or petition. In the event that it is determined that a fee is required, any additional fees required can be charged to PTO Deposit Account No. 033975.

* * *

In view of the foregoing, it is respectfully submitted that the application is in condition for Allowance. Favorable reconsideration and prompt Allowance of the Application is earnestly solicited.

Should the Examiner believe anything further would be desirable in order to place the Application in better condition for Allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

PILLSBURY WINTHROP LLP

By: _____

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Tel. No.: 703.905.2000

Docket Number: 017058-0301261
Client Reference: H-478

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of

ROBERT A. WILLIAMS

Group Art Unit: 2123

Application No.: 09/810,741

Examiner: E. Garcia Otero

Filed: March 16, 2001

Confirmation No.: 6874

For: METHOD OF PILOT TRAINING USING SIMULATED ENGINE FAILURE

RESUBMISSION OF INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

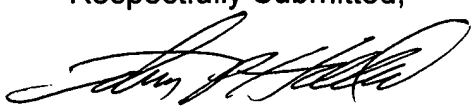
This Information Disclosure Statement is being resubmitted in response to the Examiner's indication in the September 10, 2004 Office Action that the Sikorsky reference (filed with a August 3, 2001 Information Disclosure Statement) was not considered because it was "not present in file." A copy of the August 3, 2001 Information Disclosure Statement is enclosed along with a Form PTO-1449 and a copy of the Sikorski reference.

Also enclosed is a filing receipt received from the Patent Office evidencing that a copy of the Sikorski reference was received by the Patent Office on August 8, 2001. Thus, consideration of the Sikorski reference is requested without fee or petition. In the event that it is determined that a fee is required, any additional fees required can be charged to PTO Deposit Account No. 033975 and a duplicate copy of this Paper is attached.

Pursuant to 37 CFR 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom. Applicants respectfully request the Examiner return an initialed

copy of the enclosed Form PTO-1449 to Applicants with the next Office communication to indicate that the reference(s) has been considered, per MPEP § 609.

Respectfully Submitted,



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Attorney(s): TFS/ke/msg
Serial/Patent No.:09/810,74
Client/Matter#: 121723-1022
Title: Method of Pilot Training Using Simulated Engine Failure
Inventor(s): Robert Arthur Williams.
Today's Date: 8/3/01 **Due Date:** N/A **Filed with U. S. Patent Office on:** 3/16/01

- [X] Information Disclosure Statement
- [X] Letter
- [X] Other: PTO Form 1449 - IDS Cover Sheet and Sikorsky Reference
- [X] First Class Mail
- [ ] Hand Delivery via Rachel Carmichael

GARDERE

attorneys and counselors ▪ www.gardere.com

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214-999-4632

August 3, 2001

Via First Class Mail

Commissioner for Patents
Washington, D.C. 20231

Re: Serial No.: 09/810,741
Patent Application entitled: "Method of Pilot Training Using Simulated Engine Failure"
Filing Date: March 16, 2001
Bell File No.: H-478
Our File No.: 121723-1022

Dear Sir:

Enclosed for filing please find the following items relating to the above-identified application:

(1) Information Disclosure Statement;
(2) PTO Form 1449 - IDS cover sheet with one reference; and
(3) Post Card.

Please file the above documents and return the date-stamped postcard to our office at the address listed above. It is believed that no fees are due; however, if this is in error, the Commissioner is authorized to take the additional fees from deposit account number 07-0153. In the meantime, if you have any questions or comments concerning this matter, please call the undersigned at your earliest convenience. Otherwise, please accept the enclosed.

Sincerely,

Theodore F. Shiells.

Reg. No.31,569

TFS/mg

Enclosure

DALLAS 1039909v1

Attorney Docket No. 121723-1022

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application: Robert Arthur Williams

Serial No. 09/810,741

Filed: March 16, 2001

Art Unit: 3644

Examiner:

For: Method of Pilot Training Using Simulated Engine Failure

Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

As listed on the accompanying form PTO-1449, submitted herewith are copies of the indicated references which applicant believes may be material to the examination of the above-identified application, and in respect of which there may be a duty to disclose in accordance with 37 CFR 1.56.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made, an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists. Further, the filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Written notification that the enclosed references have been considered in their entirety by return of a copy of the enclosed form, completed by the Examiner, is respectfully requested.

IDENTIFICATION OF TIME OF FILING THE
INFORMATION DISCLOSURE STATEMENT

[ ] This Information Disclosure Statement is being filed with the application;

[ ] This Information Disclosure Statement is being filed within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or

[X] This Information Disclosure Statement is being filed before the mailing date of the First Office Action on the merits; or

[ ] This Information Disclosure Statement is being filed after three months of the filing date of this national application or the date of entry of the national stage as set forth in § 1.491 in an international application or after the mailing date of the first Office Action on the merits, whichever event occurred last but before the mailing date of either a final action under § 1.113 or a notice of allowance under § 1.311, whichever occurs first.

Accompanying this transmittal is:

[ ] a certification specified in 37 CFR § 1.97(e); or

[ ] a fee set forth in 37 CFR 1.17(p) for submission of an information disclosure statement under §1.97(c) - ($240.00)

[ ] This Information Disclosure Statement is being filed after a final action under § 1.113, whichever occurs first, but before, or simultaneously with the payment of the issue fee.

Accompanying this transmittal is:

a. a certification as specified in 37 CFR 1.97(e);

b. Applicant hereby petitions for the consideration of the accompanying information disclosure statement. 37 CFR 1.97(d)(ii); and

c. Applicant submits the petition fee set forth in 37 CFR 1.17(i)(1) -- ($130.00).

CERTIFICATION FOR INFORMATION DISCLOSURE STATEMENT 37 CFR 1.97(e)
(Only if Required Above)

I, the person(s) signing below certify:

[ ] that each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement. 37 CFR 1.97(e)(1); or

[ ] that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in the counterpart foreign application to the knowledge of the person signing the certification after making reasonably inquiry, was known to any individual designated in § 1.56(c) more than three months prior to the filing of the statement. 37 CFR 1.97(e)(2).

FEE PAYMENT

[ ] attached is a check in the amount of $ _____

[ ] charge Deposit Account No. 07-0153
in the amount $ _____

A duplicate of this request is attached. Applicant believes no additional fees are due for the filing of this IDS. However, if any additional fees are due, or any overpayments have been made, please charge, or credit, Deposit Account No. 07-0153.

Dated: August 3, 2001

Theodore F. Shiells
Attorney for Applicant and Assignee
Registration No.: 31,569

Gardere Wynne Sewell LLP
3000 Thanksgiving Tower
1601 Elm Street
Dallas, TX 75201-4761
(214) 999-4632
(214) 999-3632 (FAX)

Certificate of Mailing

Date of Deposit: August 3, 2001

I certify that the accompanying paper is being deposited with the United States Postal via First Class Mail, postage paid, under 37 CFR 1.08 on the date indicated above and is addressed to the Commissioner for Patents, Washington, DC 20231.

Marsha S. Green

DALLAS 1039906v1

FORM PTO-1449 (REV. 7.80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 121723-1022	SERIAL NO.: 09/810,741
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)		APPLICANT Robert Arthur Williams	
		FILING DATE: 3/16/01	GROUP: 3644

U. S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (if appropriate)

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	SIKORSKY 76 FLIGHT Manual - SA 4047-76C-10 - Part 2, Section I Description -page 1-8E; Section V Supplemental Performance Data - pgs. 5-44 through 5-47, Revised September 30, 1999

EXAMINER:	DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

check for the presence of DECU faults as part of the pre-landing checks. Similarly, Minor faults (e.g. FLY GATE) have no effect in flight but can alter normal ground operation such as engine shutdown.

ENGINE FAILURE TRAINING MODE

The system has a training device to safely simulate the OEI operation modes without affecting the engine TBO.

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CAUTION

The crew must ensure that the aircraft is loaded to the training WAT curve or less before selecting any mode of OEI training.

For each engine the pilot can select:

the training flight mode which derates dual engine power in the precise ratio for the reduced weight training WAT curve.

the training idle mode simulates an engine failure of the engine selected. In this case the remaining engine will appear and function exactly as if an actual engine failure of the other engine had occurred. The simulated failed engine is governed at 91% N2, can provide full power there if excessive rotor droop is encountered, and when deselected the engine will readily accelerate to join the other engine.

The system indicates the switching to training mode by an electrical signal supplying a helicopter indicator light located on the instrument panel (Figures 1-3 and 1-5).

Interlocks will inhibit OEI training idle if a DECU fault is detected or manual training is selected. The training mode will not be selectable unless design conditions are satisfied.

MANUAL MODE CONTROL

The system uses the engine lever in the manual track to control manually the engine in back-up mode in the case of a major DECU fault. The FCU includes protection against surge in the event excessive acceleration is commanded by the pilot and flame-out if the engine is inadvertently commanded to a speed less than ground idle. The system has a training mode for manual back up; the pilot can force the manual mode by using MANUAL/AUTOMATIC selector located on the aft overhead switch panel (Figures 1-3 and 1-6). After manual training, the pilot can switch again to automatic mode. An interlock is provided to inhibit training manual if the opposite engine detects a DECU major fault.

PILOT TRAINING PROVISIONS

- Single Engine Pilot Training
- Manual Reversion Training

SINGLE-ENGINE PILOT TRAINING

A. PURPOSE:

To provide a means to accomplish safe and realistic pilot training during simulated one engine inoperative situations while retaining equally realistic dual engine operation prior to the simulated failure. Crews are encouraged to use the OEI training feature in strict accordance with the procedures and only within the gross weight limits found within this document. Preparation and familiarity through training may be expected to enhance pilot performance during actual emergencies.

B. CONCEPT:

To prevent the unnecessary use of the actual single engine ratings, the 30 Second power limiter is set equal to or less than normal dual engine takeoff power, and the 2 Minute and OEI MCP limiters are ratioed below that. The aircraft gross weight is loaded in accordance with the reduced weight, OEI Training WAT curve which has been carefully designed to retain the correct ratio of power and weight for the aircraft configurations and ambient conditions presented on the chart. To complete the fidelity from a performance and handling point of view, the dual engine power provided when selected in dual training is similarly ratioed, and all normal DECU features such as single speed 107% governing, load sharing, limiting, and dual engine blowaway are retained in entirety.

Both N1 and torque indications are biased to appear correct at the limits; T5 and fuel flow are not. When either dual engine limit is reached, N1 will indicate 100.0% in the ambients where the engine would normally be expected to be N1 limited, or torque will indicate 100% in correspondingly colder ambients. When against the limit, the application of additional collective will result in rotor droop. Similarly, during OEI operation with one engine selected to training idle, N1 or torque of the other engine will indicate correctly at the limit selected when power required is commanded to the limit by collective input.

With respect to N1 and torque indications, DECU features and characteristics, and apparent handling response, accurate training is preserved while limiting engine power to 100% N1 or less. The aircraft, loaded to the training WAT curve, will perform during the training flight as it would if loaded at normal Category A WAT gross weights with normal specification power available at each rating.

C. SAFETY:

Both engine levers remain in the FLY position during OEI training. During single engine work, the simulated failed engine in training idle remains governed at 91% N_2. If training idle is deselected by moving the training switch to the center position, the acceleration time for the simulated failed engine to reach 107% N_2 and provide power is minimized.

If an actual engine failure is detected on either engine during training, the engine in training idle will automatically exit training and accelerate to provide either real (non-training) 2 Minute power or OEI MCP, if active, at 107% N_2, while the engine in training flight would have provided power up to the real 2 Minute limit in place. The 30 Second limit can be commanded, but due to the very light training gross weight, the need for this power is considered unlikely.

If an OEI training maneuver is performed improperly resulting in excessive rotor droop, the engine in training idle will begin to provide power at 91 % N_2 and will reach maximum power if N_r droops further.

The OEI training function is inhibited if either engine has latched a Degraded or Major fault, and if either category fault is detected while in training, an automatic exit from the mode will occur. Additionally, the DECUs will ignore any training switch command at power-up and recognize commands only when received during a powered state. If the switch is inadvertantly left on from a previous flight, the function will remain inoperative until switched off and back on during DECU powered operation.

D. CONFIGURATION; switches, lights, and functions:

1. OEI Training Switch - Located beneath the copilot's power-off V_{ne} placard door, the switch has four positions arranged as a T. The center aft position is off; center forward is dual engine training; and forward, lever locked to the left or right, is trainng idle (simulated OEI) for #1 or #2 engine respectively. An amber caution light, adjacent to the power-off V_{ne} placard is illuminated if the switch is set to any of the three forward positions and the engine DECUs recognize the switch command.

2. 30 Second and 2 Minute OEI Armed and Usage Lights - The lights function correctly in all respects during training.

3. The collective mounted OEI Limits Select switches - The switches function correctly in all respects during training.

4. Engine Out lights and audible tone - The engine out lights and tone are not included in the simulation. For the purpose of safety, the engine out lights will remain off during simulated OEI operation, but they will illuminate and the tone will sound if an actual engine failure does occur.

5. DECU early detection engine out logic - The comparator based logic will not function during simulated single engine operation, although the feature will be fully functional in training flight prior to the simulated failure. The individual, N1 trip point based engine out warnings will always remain operative.

E. OPERATING LIMITATIONS:

1. Loading must not exceed the weight derived from the training WAT curve.

2. Both engines remain in FLY during single engine training.

3. Qualified flight instructor is responsible for the conduct of the training.

F. NORMAL PROCEDURES:

PRE-FLIGHT

1. Determine OAT and pressure altitude of site to be used for single engine proficiency training.

2. Using the training WAT curve, determine the correct weight for the prevailing ambients (adjust OAT to suit ETD) and ensure that the aircraft is loaded accordingly.

PRE-TAKEOFF

1. With both engines in FLY, check that the engine control lights, engine lever handle lights, and mixed mode lights are off. Confirm that no Major or Degraded faults are present. Training will not function unless these conditions are satisfied.

2. Select the training switch to dual training and note that N1 and torque indications for both engines increase.

3. Observe the amber training selected caution light.

4. Select either engine to training idle.

5. Check that the engine decelerates to 91% N2.

6. Check that the 30 Second Armed light is on for the remaining engine, increase power to achieve at least 95.0% N1, and evaluate the collective OEI Limits Select switch by commanding 2 Minute and OEI MCP. Reduce power to less than 95.0% N1 and check that the active limit reverts back to 30 Seconds.

7. Deselect training idle and check the acceleration of the engine back to matched N1.

7A. Using the overhead MANUAL TRAINING/START switch, momentarily (one second is sufficient) select NO. 1 ENG and verify illumination of the manual reversion light. Then select NO. 2 ENG and verify illumination of the manual reversion light. Return the switch to AUTO. Confirm that the switch is in AUTO and that both manual reversion ENGINE CONTROL lights are off.

8. If desired, leave the training switch in training flight and proceed with takeoff and flight. Consider deselecting training when that portion of the flight has been completed.

SIMULATED OEI TRAINING

OEI training may include simulated engine failures at any point. In hover prior to takeoff, accelerating to CDP, after CDP, during climbout, in cruise, and during approach before and after LDP are suggested points for evaluation.

Upon selecting one engine to training idle, the instructor must remain vigilant and be prepared to intercede in lowering collective, assisting with control of pitch attitude to preclude tail strikes or to achieve desired airspeed, or restoring the simulated failed engine to training flight; whichever is appropriate.

Following each simulated single-engine maneuver, establish stable dual engine operation such as during steady dual engine climb out after a continued takeoff, during dual engine roll-out on the ground following a rejected takeoff, or in dual-engine cruise flight. From a stable dual engine condition (either in dual training or in dual automatic), perform the additional precautionary step as follows:

> Using the overhead MANUAL TRAINING/START switch, momentarily (one second is sufficient) select NO. 1 ENG and verify illumination of the manual reversion light. Then select NO. 2 ENG and verify illumination of the manual reversion light. Return the switch to AUTO. Confirm that the switch is in AUTO and that both manual reversion ENGINE CONTROL lights are off.

Remember to perform the reset procedure after the last OEI training maneuver before resuming normal operation.

EXAMPLE

The following example describes desired engine indications during a possible continued takeoff maneuver when training idle is selected just after passing CDP airspeed.

1. The remaining engine N_1 increases into the 30-Second region, the 30-Second Usage light is on, and the pilot has controlled rotor droop to 100% N_r while accelerating to and flying V_2 airspeed.

2. At 27 seconds duration, the usage light starts to flash, and the pilot selects 2-Minute power.

3. The N1 decreases in 3 seconds to 101.2% and the pilot lowers collective as necessary to maintain 100% Nr. The 2-Minute usage light is on.

4. With obstacles cleared, the landing gear may be retracted, and the aircraft smoothly accelerated to V_{broc} airspeed.

5. At 1 minute 57 seconds duration, the usage light starts to flash, and the pilot selects OEI MCP.

6. The N1 decreases in 3 seconds to 100.0% and the pilot lowers collective to maintain 100% Nr. Both N1 indicator usage lights will be out.

7. With sufficient demonstration of proficiency, the training switch is restored to the training flight position in preparation for the next maneuver.